VIP X16 XF E Video Encoder

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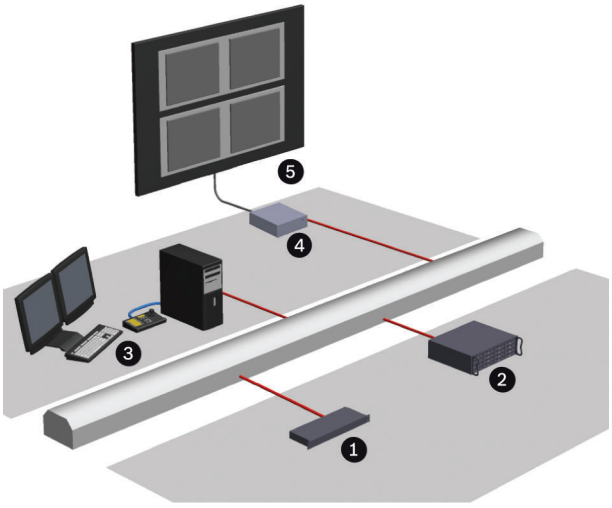
BOSCH
Invented for life

- 16 video input channels with Dual Streaming
- Deinterlacing at video input and progressive encoding
- Network-attached iSCSI recording
- Motion detection and privacy masking
- ONVIF conformant

Bosch VIP X16 XF E is a 16-channel CCTV video encoder that offers top-of-the-line Video-over-IP performance for CCTV today.
The device provides a 1 Gbps Ethernet port on the rear.
The VIP X16 XF E H.264 High Profile encoder delivers real-time H.264 compressed video over IPv4 and IPv6 networks. It provides a single stream per camera with full frame rate at best quality and Dual Streaming with limits in frame rate.
The unit supports PAL and NTSC sources and offers bidirectional audio communication in parallel to video.
View the video on a PC using Bosch's comprehensive video management system, with or without Bosch's IntuiKey keyboard. Alternatively, use a Web browser.
Bosch VideoSDK provides the means to integrate the encoder with other video management systems.
With 16 channels in a rack-mountable 1HU form factor VIP X16 XF E offers the highest port density at this quality of video.

System overview



1	VIP X16 XF E with 16 analog cameras, network-attached iSCSI storage, or streaming only
2	Network-attached iSCSI RAID unit
3	Management station with CCTV keyboard
4	Decoder
5	Monitors

Functions

Flexibility
VIP X16 XF E supports external iSCSI storage across an IP network.
VIP X16 XF E supports the Bosch VRM (Video Recording Manager), Bosch's flexible and scalable recording management software. It allows a flexible assignment of recording space on camera level including load balancing and decent redundancy features. Bosch VRM is available as stand-alone system or embedded into the Bosch Video Management System.

Dual Streaming
The VIP X16 XF E encoder uses the feature Dual Streaming to generate two independent IP video streams per channel, both at full 4CIF resolution, the first stream with full frame rate and the second stream with lower frame rate.

Recording
You can record each video input independently on different media. Thus video can be recorded centrally on iSCSI drives managed by Bosch VRM.
The encoder features a highly flexible recording scheduler, providing up to ten programmable recording profiles and allowing individually assigned camera profiles. With these profiles, you can accelerate the frame rate as well as increase the quality on alarm, saving recording space during non-alarm periods.

Access security
The VIP X16 XF E encoder offers various security levels for accessing the network, the unit, and the data channels. As well as password protection with up to three levels, they support 802.1x authentication using a RADIUS server for identification. You can secure Web browser access by HTTPS using a SSL certificate that is stored in the unit. For total data protection, each communication channel—video, audio, or serial I/O—can be independently AES encrypted with 128-bit keys, once the Encryption Site License has been applied.

Intelligence
VIP X16 XF E comes with built-in MOTION+ video motion detection. This motion detection algorithm is based on pixel change and includes object size filtering capabilities.
On alarm, VIP X16 XF E can send an e-mail with JPEG images attached.

Viewing
View the VIP X16 XF E encoder video on a PC using a Web browser, in the Bosch Video Management System, or integrate it into another video management system. By routing the IP video to a high-performance decoder VIP XD HD or a Monitor Wall, you can present the video with ultimate clarity.

Easy upgrade
Remotely upgrade VIP X16 XF E whenever new firmware becomes available. This ensures up-to-date products, thus protecting investment with little effort.

ONVIF conformance
Conformance to ONVIF 1.02 and ONVIF Profile S provides interoperability between network video products regardless of manufacturer. In addition, the firmware of the device supports all applicable features of the ONVIF 2.2 specification.
ONVIF conformant devices are able to exchange live video, audio, metadata, and control information and ensure that they are automatically discovered and connected to network applications such as video management systems.

Certifications and approvals

Safety

Region	Number
	IEC 60950

System

Region	Number
	IEC 62676-2
	EN50132-5-2

Electromagnetic Compatibility

Region	Number
EU	EN55022 ITE
	EN55024 ITE
	EN50130-4 Alarm systems
	EN50121-4
	EN61000-3-2
	EN61000-3-3
US	FCC 47 CFR, Part 15 Subpart B Class B
AU	AS/NZS 3548 Class B

Approvals

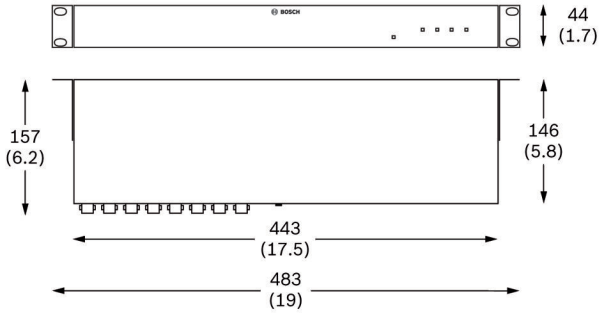
Region	Certification	
Europe	CE	VIP X16 XF E
USA	UL	Certificate of Compliance VIP X16 XF E
	UL	Bosch UL online certifications directory (link)

Installation/configuration notes

	Stream 1	Stream 2
4CIF	25/30 ips	6.25/7.5 ips

ips = frame rate in images per second

Dimensions



Dimensions in mm (in)

Front view

VIP X16 XF E-front

1 Factory reset button

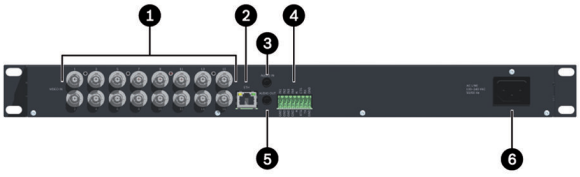
2 LED **ACTIVITY**

3 LED **LINK**

4 LED **STATUS**

5 LED **CONNECT**

Rear view



VIP X16 XF E-rear

1 **VIDEO IN 1** to **16**

2 1 x 10/100/1000 Base-T Gigabit Ethernet

3 **AUDIO IN**

4 Alarm in, relay out, COM (RS-232/422/485)

5 **AUDIO OUT**

6 Power supply input

Parts included

Quantity	Component
1	VIP-X16XF-E
1	Accessory bag
1	Installation Manual
2	Power cords (EU/US one each)

Technical specifications

Input/output	
Video	16 x input
• connector	BNC
• impedance	75 ohm, terminated
• signal	Analog composite, 0.7 to 1.2 Vpp , NTSC or PAL
Audio	2 x mono in, microphone/line 1 x mono line out
• connector	2 x 3.5 mm (1/8 in) stereo jack
• signal line in	9 kohm typical, 5.5 Vpp max, microphone amplifier 60 dB max
• signal line out	3.0 Vpp at 10 kohm
Alarm	4 x input
• connector	Clamp (non-isolated closing contact)
• activation resistance	10 ohm max
Relay	1 x output
• connector	Clamp
• signal	30 Vpp (SELV), 0.2 A
COM port	Clamp, RS-232/422/485

Video	
Standards	H.264 High Profile (ISO/IEC 14496-10) M-JPEG
Data rates	9.6 kbps to 2 Mbps per channel
Resolution (Horizontal x vertical PAL/NTSC)	4CIF 704 x 576/480
GOP structure	I, IP
Total delay	260 ms typical
Dual Streaming	Full performance on first stream, limited frame rate on second stream
Frame rate	1 to 25/30 ips

Audio	
AAC	
• Profile	AAC-LC
• Frequency rate	300 Hz to 6.4 kHz
• Data rate	48/80 kbps at 16 kHz sampling rate
G.711	
• Frequency rate	300 Hz to 3.4 kHz

Audio	
• Data rate	80 kbps at 8 kHz sampling rate
L16	
• Frequency rate	300 Hz to 6.4 kHz
• Data rate	640 kbps at 16 kHz sampling rate
Signal-to-noise ratio	> 50 dB

Network	
Ethernet	10/100/1000 Base-T, auto sensing, half/full duplex, RJ45
Protocols	IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP/RTCP, IGMP V2/V3, ICMP, ICMPv6, RTSP, FTP, Telnet, ARP, DHCP, NTP (SNTP), 802.1x, DNS, DNSv6, DDNS (DynDNS.org, selfHOST.de, no-ip.com), SMTP, iSCSI, UPnP (SSDP), DiffServ (QoS), LLDP, SOAP, Dropbox, CHAP, digest authentication
Connections	16 simultaneous unicast/multicast min
Encryption	TLS 1.0, SSL, DES, 3DES, AES

Control	
Software update	Flash ROM, remote programmable
Configuration	Configuration Manager or web browser
Camera control	Via serial interface; supported* protocols and devices:
• Bosch	AUTODOME, HSPT, MIC1-300 IP, TC8x00
• Canon	VCC1, VC-C4R
• CBC	SMD 12P/12PII/20P
• JVC	TK-C676
• Panasonic	WV-CS850
• Pelco	Spectra D/P
• Sensomatic	SpeedDome Ultra
• Sony	EVI D30/31/D100
• Ultrak	KD6
• VT	VPT4x
	* Basic functions only, no claim for full functionality valid. Bosch may not be made responsible if functions are not implemented or not working under all circumstances.

Mechanical	
Dimensions (H x W x D)	44 x 483 x 157 mm (1.7 x 19 x 6.2 in)
Color	RAL 9017 (Traffic Black)
Weight	Approx. 1.7 kg (3.7 lb)

Electrical	
Input voltage	100 to 240 VAC, 47 to 63 Hz
Input current	0.32 to 0.15 A
Power consumption	16 W
Connectors	IEC 320 C14

Environmental	
Operating temperature	0 °C to +50 °C (+32 °F to +122 °F)
Storage temperature	0 °C to +50 °C (+32 °F to +122 °F)
Relative humidity	0 to 95%, non-condensing
Thermal value	55 BTU/h max

Ordering information

VIP X16 XF E Video Encoder
High-performance multi-channel encoder. H.264 High Profile; dual streaming; audio; Motion+; iSCSI recording; 16-channel
Order number **VIP-X16XF-E**

Accessories

DIVAR IP 2000, 2 x 2 TB HDD
All-in-one recording and management solution for network surveillance systems of up to 16 channels, 2 x 2 TB storage capacity
Order number **DIP-2042-2HD**

DIVAR IP 2000, 4 x 2 TB HDD
All-in-one recording and management solution for network surveillance systems of up to 16 channels, 4 x 2 TB storage capacity
Order number **DIP-2042-4HD**

DIVAR IP 3000, 2 x 2 TB HDD
All-in-one recording, viewing, and management solution for network surveillance systems of up to 32 channels, 2 x 2 TB storage capacity
Order number **DIP-3042-2HD**

DIVAR IP 3000, 4 x 2 TB HDD
All-in-one recording, viewing, and management solution for network surveillance systems of up to 32 channels, 4 x 2 TB storage capacity
Order number **DIP-3042-4HD**

Software Options

BVIP AES 128 Bit Encryption
Site licence for BVIP AES 128-bit encryption. Enables encrypted communication between BVIP devices and management stations
Order number **MVS-FENC-AES**

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8599450891 | en, V18, 27. Mar 2014